

## ON THE HABITAT OF SOME CARABID BEETLES (COLEOPTERA: CARABIDAE)<sup>1</sup>

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ABSTRACT: In this paper, the habitat of forty-one species of Carabidae from Quebec is given.

DESCRIPTORS: Coleoptera; Carabidae; Quebec, Canada.

For the last thirteen years, I have collected 60,000 carabid beetles in Quebec in order to get the "biological status" of their habitat. I have kept journals, in which the explored biotopes are described. Finally, I became acquainted with many Carabidae whose habitat is poorly known in the entomological literature. I hope these notes will be useful to other entomologists.

### SPECIES ACCOUNTS

*Agonum crenistriatum* Leconte: A xerophilous species occurring in open sandy country, where the vegetation is scarce, under stones and logs. It prefers hills.

*Agonum fidele* Casey: At the borders of ponds, marshes and brooks, in more or less shady places, where the soil is wet, under willows and alders.

*Agonum mutatum* Gemminger and Harold: At the borders of pools and lakes, where Sweet Gale (*Myrica gale* Linne) grows, in pillows of Sphagnum. It prefers acid bogs and is found with *Blethisa quadricollis* Haldeman.

*Agonum picicornoides* Lindroth: On moist places, in the vicinity of open water. On rather firm soil, often clay lightly mixed with sand, with more or less dense vegetation, under dead leaves and other vegetal debris, under willows and alders.

*Agonum tenuicolle* Leconte: Along stony, shady margins of streams and lakes, mostly in montaneous areas. It is often found with *Nebria lacustris* Casey.

*Agonum trigeminum* Lindroth: At the borders of brooks, ponds and marshes, on wet usually clayey soil, under alders or willows.

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*Anisodactylus discoideus* Dejean: At the borders of rivers, brooks and ponds, on wet sandy soil, with sparse vegetation or none at all. During the day, it hides under stones. It is commonly found with *Anisodactylus sanctaerucis* Fabricius and *Stenolophus comma* Fabricius.

*Anisodactylus nigerrimus* Dejean: On open, very dry, sandy ground, with scattered vegetation. It is found with *Anisodactylus merula* Germar and *A. rusticus* Say.

*Anisodactylus verticalis* Leconte: In deciduous woods, on moist clayey soil, often near water. During the day, it hides under dead leaves and bark of fallen trees.

*Axinopalpus biplagiatus* Dejean: On open, dry sandy or gravelly ground, with more or less abundant vegetation, under stones and boards. It prefers hills.

*Badister notatus* Haldeman: On open dry gravelly country, with sparse or moderate vegetation, often in gravel-pits, but also in waste places and gardens. By day, it hides under stones, on slopes.

*Badister obtusus* Leconte: In light deciduous forests, on stony or gravelly ground, under dead leaves. It prefers lightly damp places.

*Badister transversus* Casey: In deciduous marshy places, on wet soil with mixture of organic matters, under bark or other vegetal debris.

*Bembidion canadarium* Casey: Along brooks and roadside ditches, on open damp clayey soil, with sparse vegetation or none at all. In the daytime, it is found under stones.

*Bembidion nigrum* Say: On barren soil, usually gravel mixed with sand and clay, on river banks. During the day, it is often found under stones and in the crevices of steep banks. It is often associated with *Schizogenius lineolatus* Say and *Tachys tripunctatus* Say.

*Bembidion sejunctum* Casey: On open barren sandy soil, under logs and boards, along the edges of large salty water bodies. Its shelter being lifted, it remains motionless a long while before running away.

*Bradycellus kirbyi* Horn: On moderately shaded marshy places, with a rich vegetation, under willows and alders.

*Bradycellus nigriceps* Leconte: An hygrophilous species occurring on moist soil, with rich vegetation, at the borders of woody marshes and ponds.

*Calleida punctata* Leconte: In fields, under stones or on goldenrod flowers.

*Calosoma frigidum* Kirby: In deciduous forests, especially in maple forests. During daytime, it hides under dead leaves. In spring, it emerges only on rather warm days.

*Chlaenius tomentosus* Say: In open, dry country with sandy or gravelly soil, in hilly fields, with more or less low vegetation. During daytime, it hides under stones.

*Cymindis americana* Dejean: In deciduous woods, clearings, bush hedges and along fence rows, under stones and boards. It prefers hills and uplands.

*Cymindis borealis* Leconte: On open, dry, sandy or gravelly ground, with sparse vegetation. In sand-pits, gravel-pits and roadsides.

*Cymindis pilosa* Say: Same habitat as *C. borealis* Leconte.

*Diplocheila impressicollis* Dejean: Very hygrophilous. At the borders of standing waters, with rich vegetation of cat's-tails and willows. It is found with *Badister neopulchellus* Lindroth and *Diplocheila striatopunctata* Leconte.

*Galerita janus* Fabricius: In deciduous woods, in the mountains and uplands, under stones.

*Brachinus cordicollis* Dejean: On river banks and lake shores, on sandy or gravelly soil, more or less mixed with clay, under stones.

*Brachinus cyanipennis* Say: Same habitat as *Brachinus cordicollis* Dejean.

*Brachinus tenuicollis* Leconte: On river banks and lake shores, under stones.

*Harpalus faunus* Say: In open country, in sandy dry fields with scarce vegetation, under bark and boards; in waste places, sand-pits and roadsides. It was repeatedly found with *Calosoma calidum* Fabricius and *Harpalus lewisi* Leconte.

*Harpalus laticeps* Leconte: In dry, open country with scarce vegetation, on sandy or gravelly soil, under dead leaves and logs. It prefers hills and uplands, often in the vicinity of bushes and trees.

*Harpalus viduus* Leconte: Always at the borders of woods (preferably maple woods), on rather dry sandy soil. It prefers hills and uplands. During the daytime, it buries into the soil or hides under dead leaves. It likes clearings and woody roads.

*Lebia ornata* Say: In deciduous and mixed forests, on goldenrod flowers.

*Lebia solea* Hentz: In deciduous forests, preferably maple forests, under dead leaves or on the flowers of the Blue-stemmed Goldenrod (*Solidago caesia* Linne).

*Myas cyanescens* Dejean: In deciduous and mixed forests of mountains and hills, in lightly damp gravelly soil, where the litter is rich. By day, it buries deep into the soil or hides under dead leaves.

*Olisthopus parvatus* Say: In light deciduous and mixed forest, on gravelly or sandy soil, under dead leaves and stones. It prefers a thick litter.

*Notiophilus aeneus* Herbst: In light deciduous forests, mostly maple forests, where the soil is damp and more or less gravelly. It usually hides under dead leaves, but sometimes runs on stones, moss or logs, in the daytime.

*Pseudamara arenaria* Leconte: In deciduous forests, preferably maple forests, where the soil is damp and gravelly, with a rich litter, usually under dead leaves, but also under stones, in the fall.

*Selenophorus gagatinus* Dejean: A xerophilous species, occurring under stones, on gravelly or sandy places, with sparse vegetation. It prefers hills and uplands.

*Selenophorus opalinus* Leconte: On open dry hills, on sandy soil, with scarce vegetation, under stones. It is commonly found with *Agonum crenistriatum* Leconte, *Chlaenius tomentosus* Say and *Harpalus indigenus* Casey.

*Trichotichnus vulpeculus* Say: A deciduous forest species, found under the barks of logs. It prefers hills and is found with *Pterostichus honestus* Say and *P. tristis* Dejean.